

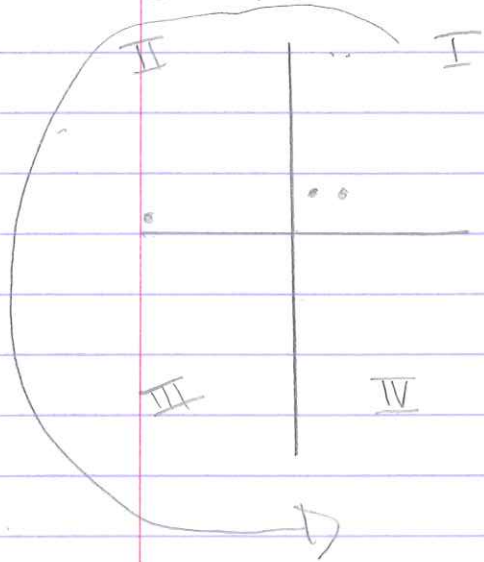
# Ch 9 first half

## Relation

is a set of ordered pairs (point)

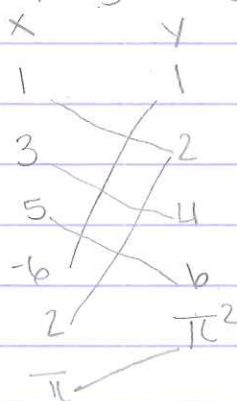
ex  $\{(1, 2), (3, 4), (5, 6), (-6, 1), (2, 2), (\pi, \pi^2)\}$

## Graph



quadrants counter clockwise.

## mapping Diagram



each line reps an ordered pair

## equation (no equation for every relation)

Ex.  $y = 2x$

$y^2 = x^2 + 1$

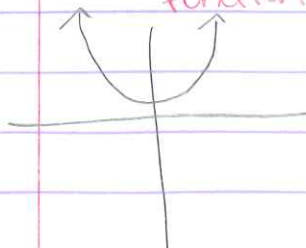
a rule that generates an order pair

x	y
3	6
4	8
5	10
$\pi$	$2\pi$
10	20

Ex.

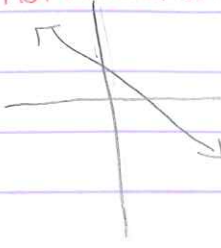
x	y
4	2
5	2
6	3

function



x	y
4	2
4	3
4	4
1	5

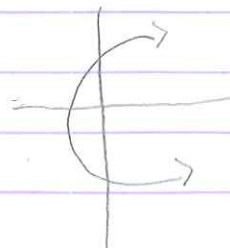
not a function



for every input (x) can only have only one output

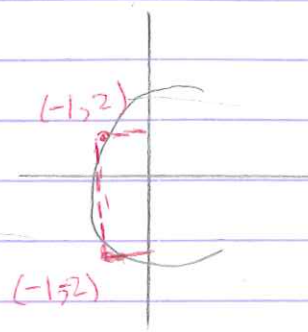
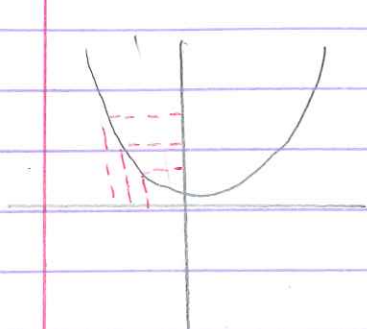
x	y
4	3
10	4
100	4

function



x	y
1	6
2	7
3	7

not a function



x y  
-1 2  
-2

for every input  
there's an output

not a function

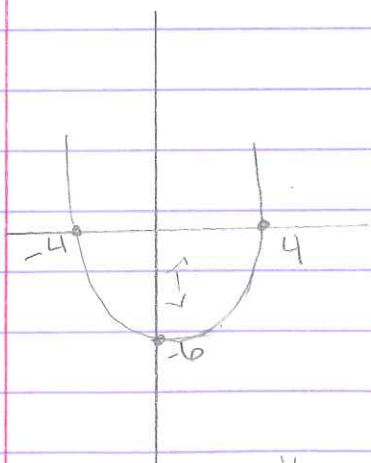
Vertical line test

If any vert line hits  
2 pts on a graph it is  
not a function.

\* If its shaded there are infinite numbers for x

x: Domain: inputs

y: Range: outputs



\* finding domain on a graph.

take a pencil and scan right and  
left. what x-values have points?

The x-values with points are in the  
domain.

Domain: all real numbers

Range:  $y \geq -6$